BY | CLASS | SUBCLASS
DRAFTSMAN

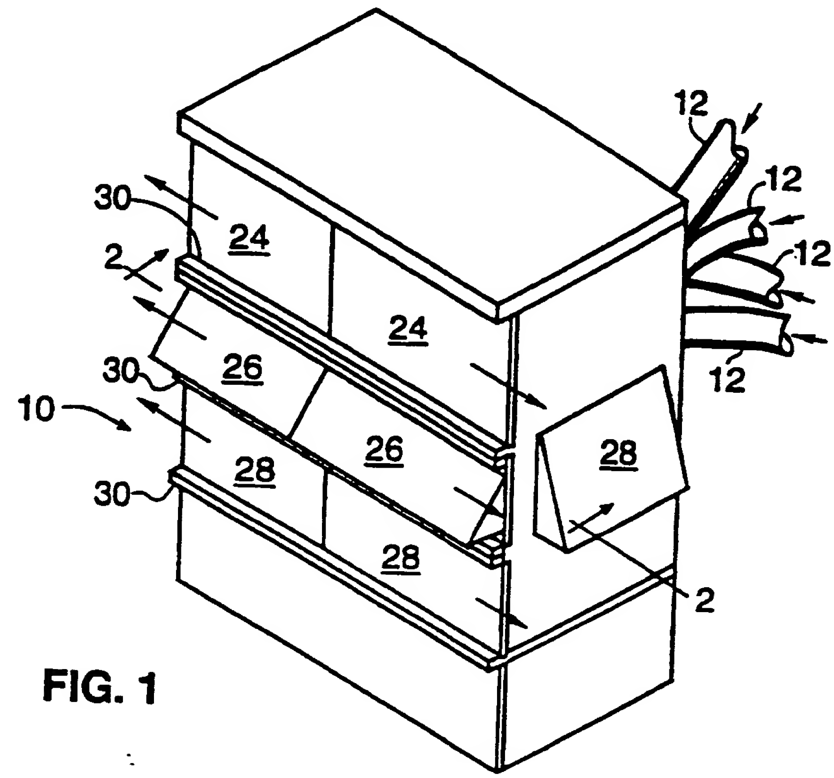


FIG. 1

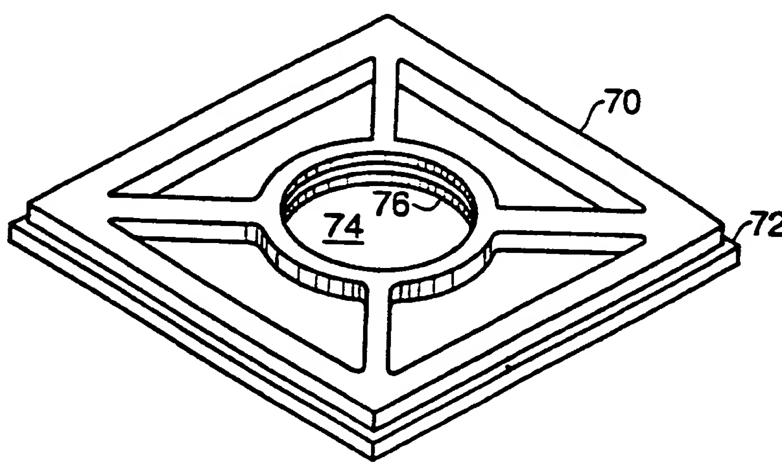
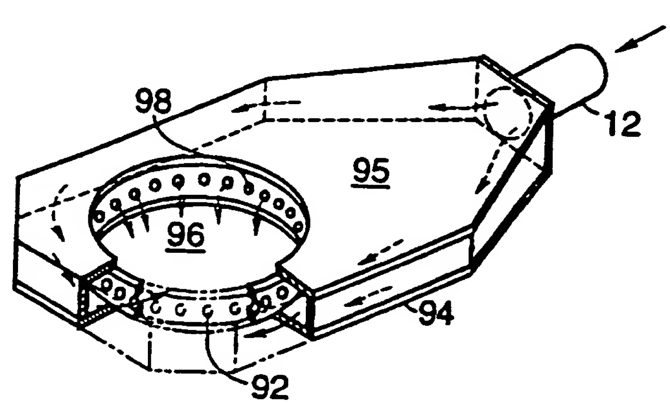


FIG. 4

FIG. 5



DRAFTSMAN
BY
CLASS
SUBCLASS

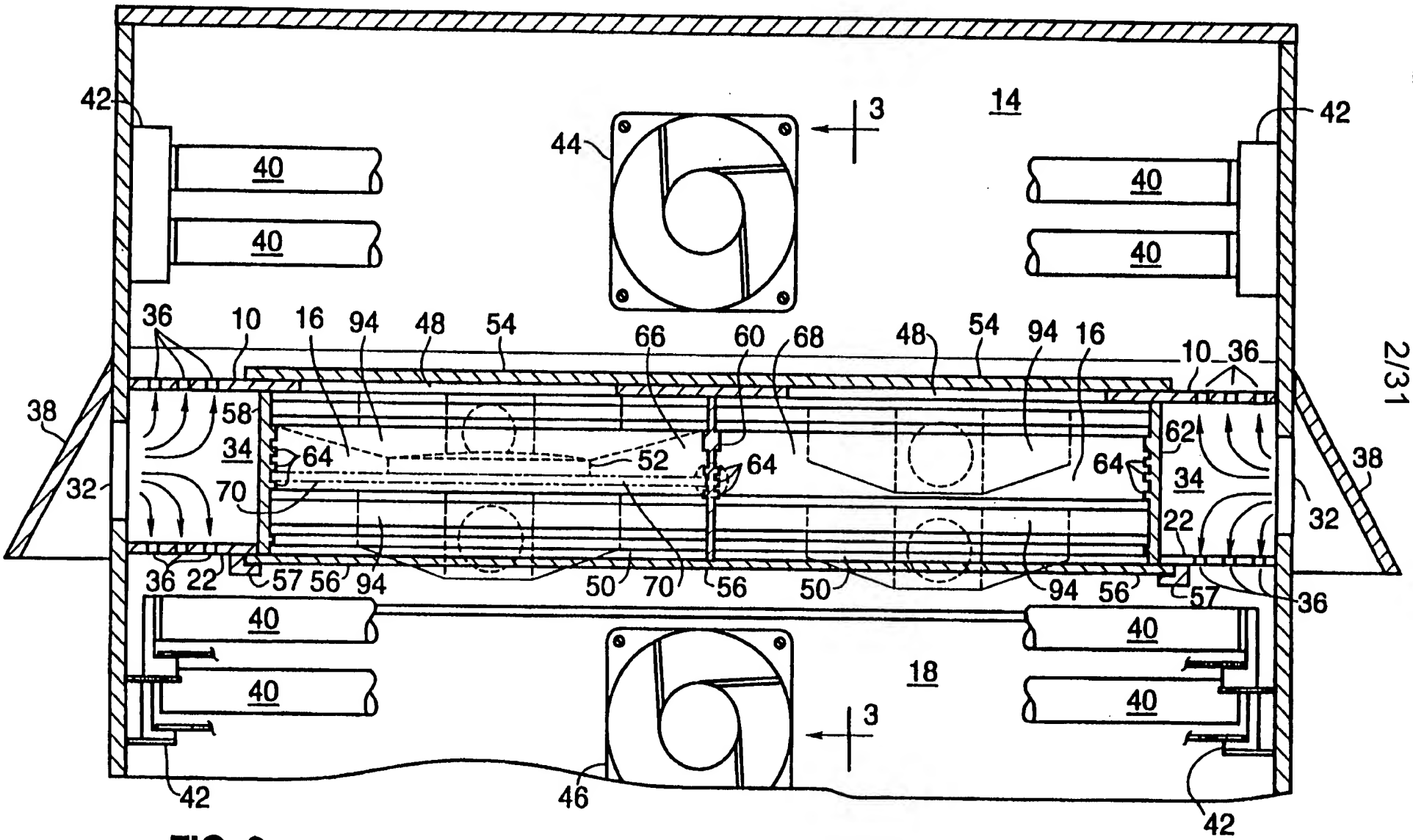


FIG. 2

BY
DRAFTSMAN
CLASS
SUBCLASS

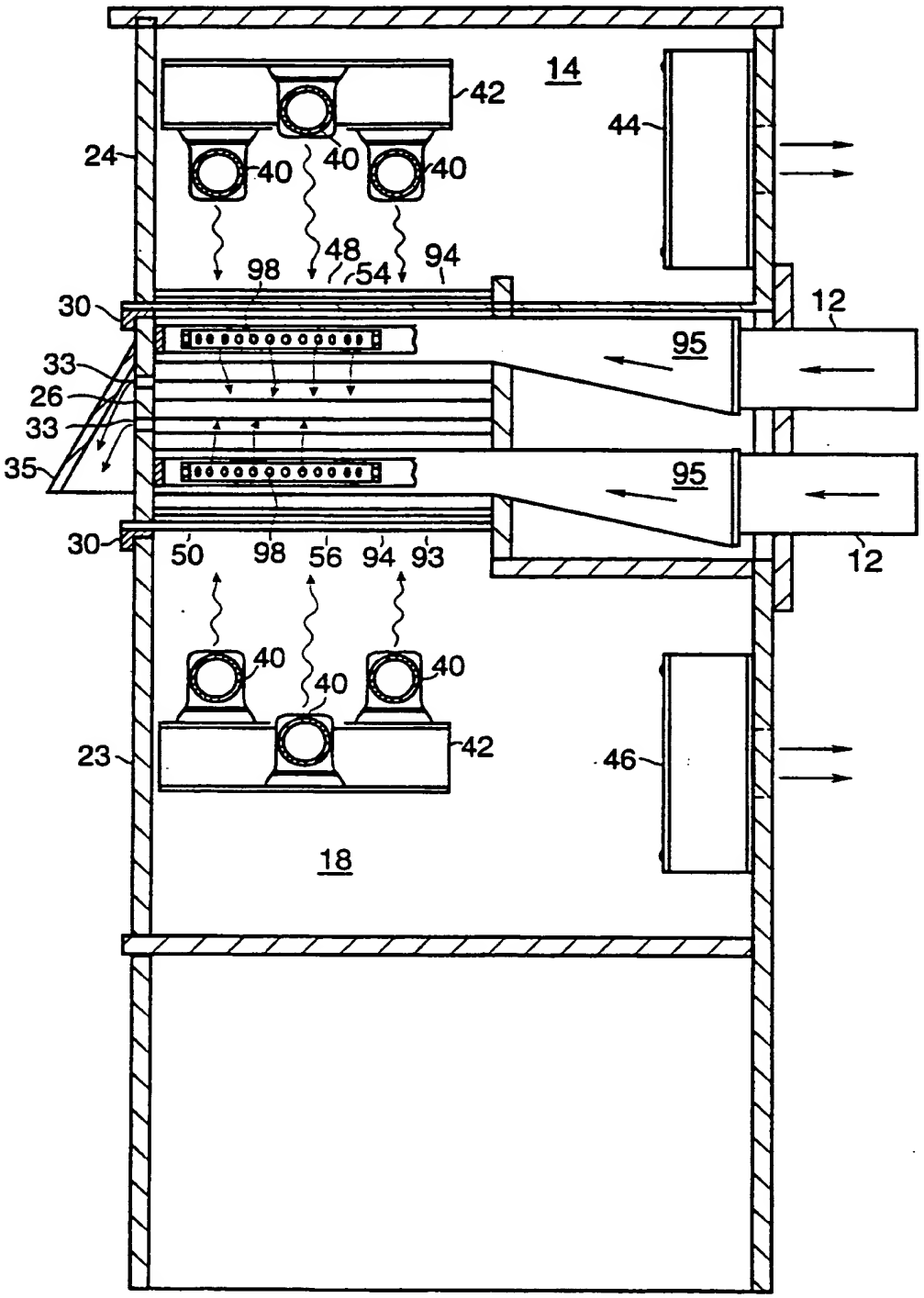


FIG. 3

BY | CLASS | SUBCLASS
DRAFTSMAN

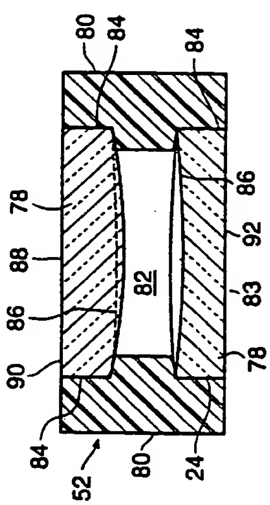


FIG. 6

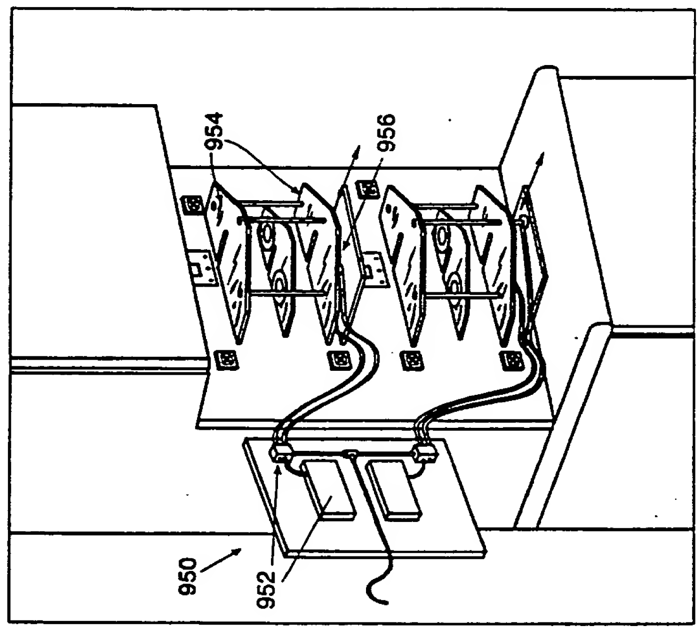


FIG. 7

O.G. FIG.
BY | CLASS | SUBCLASS
DRAFTSMAN

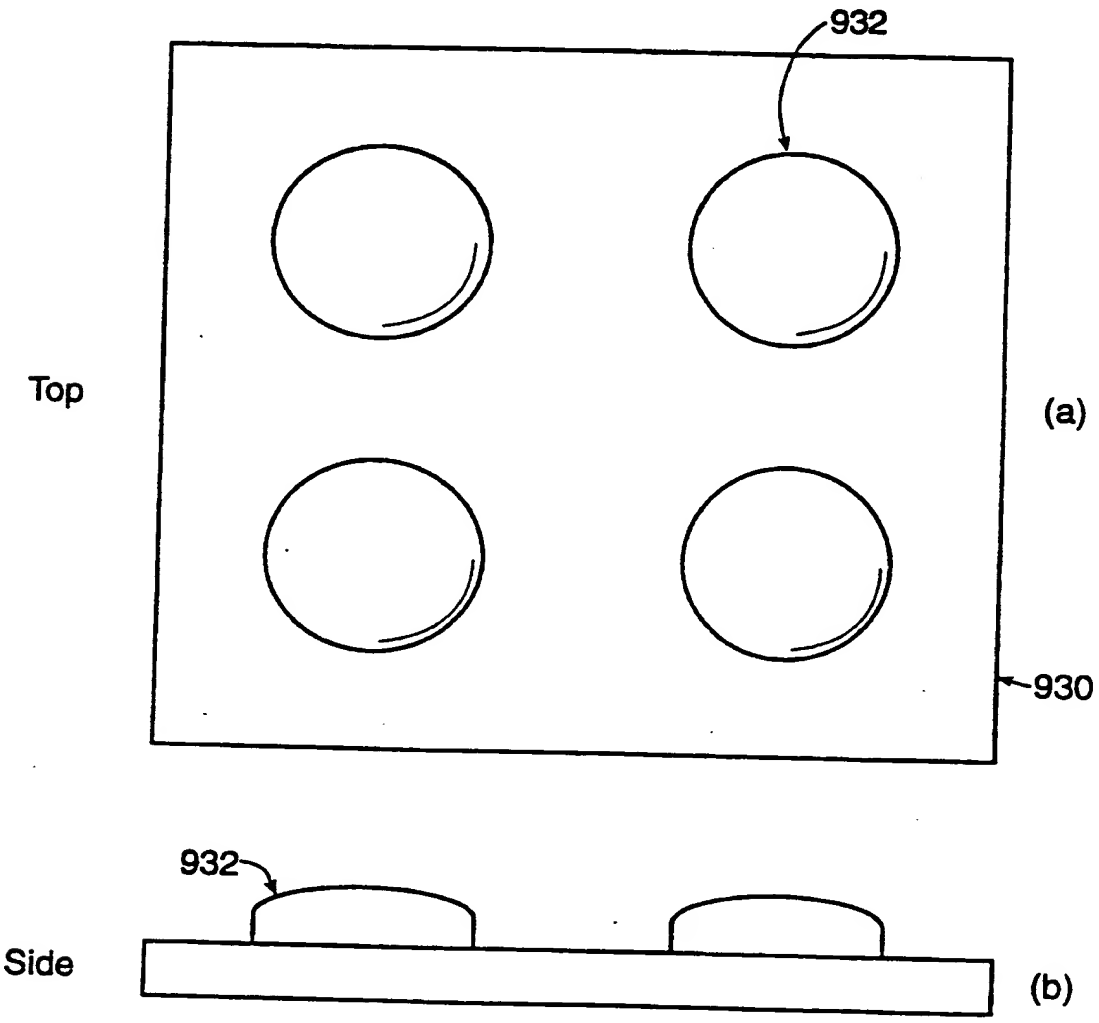


FIG. 8

APPROVED | O.G. FIG.
BY | CLASS | SUBCLASS
DRAFTSMAN

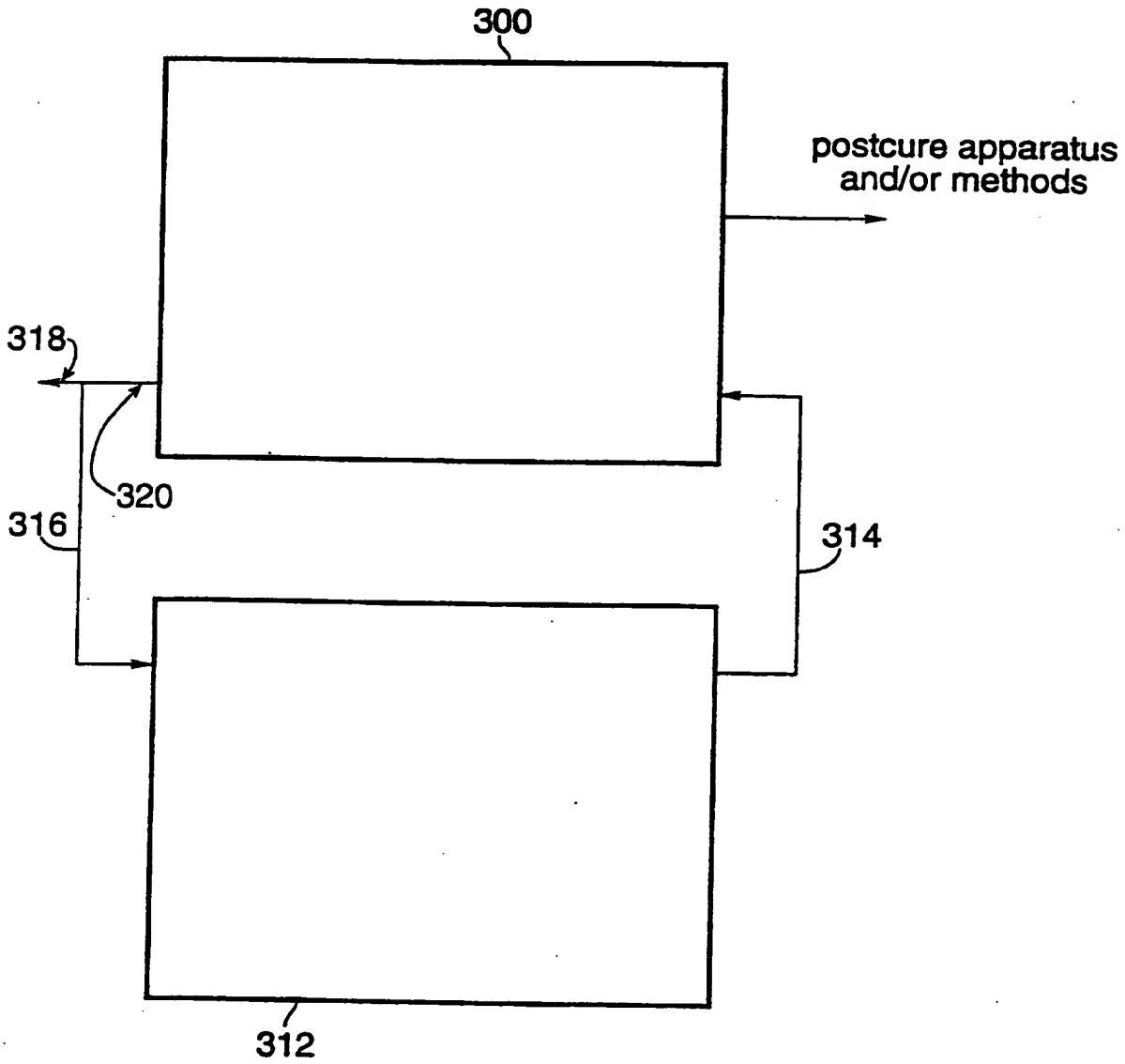


FIG. 9

BY
DRAFTSMAN
CLASS
SUBCLASS

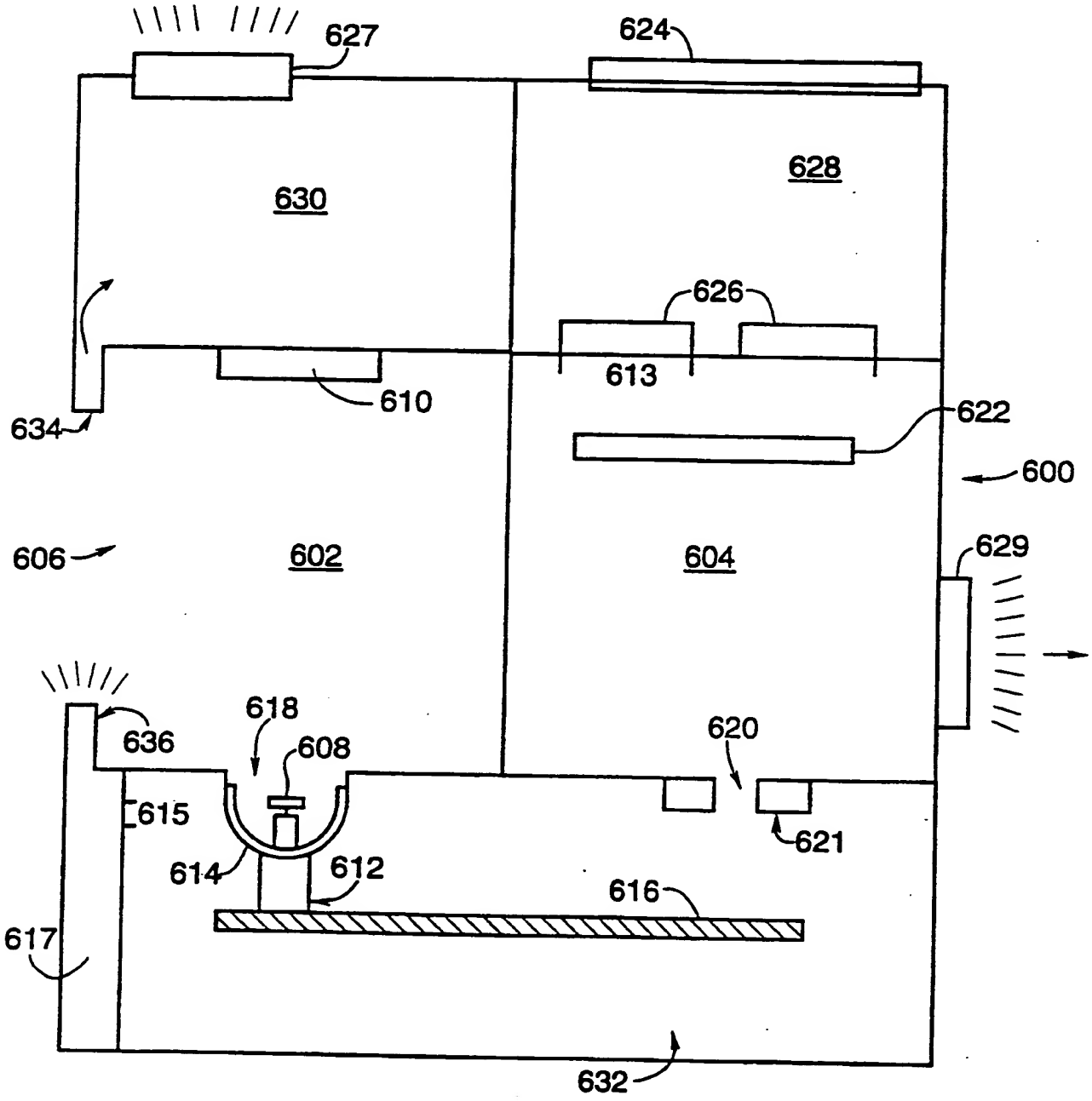


FIG. 10

O.G. FIG.
BY | CLASS | SUBCLASS
DRAFTSMAN

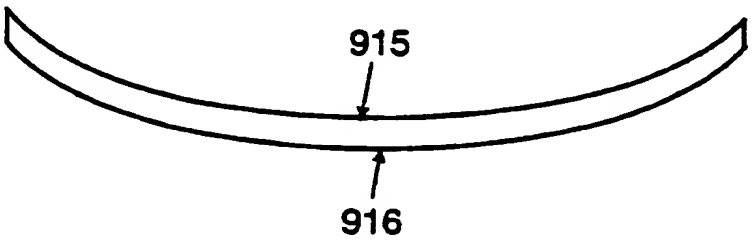


FIG. 11

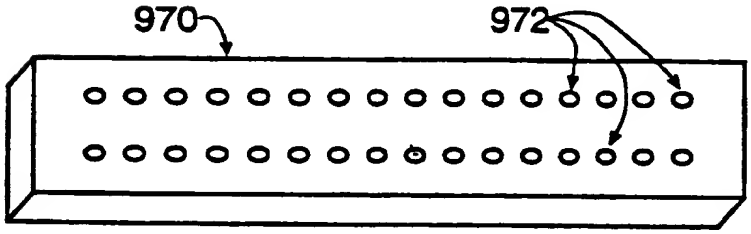


FIG. 12

BY
DRAFTSMAN
CLASS
SUBCLASS

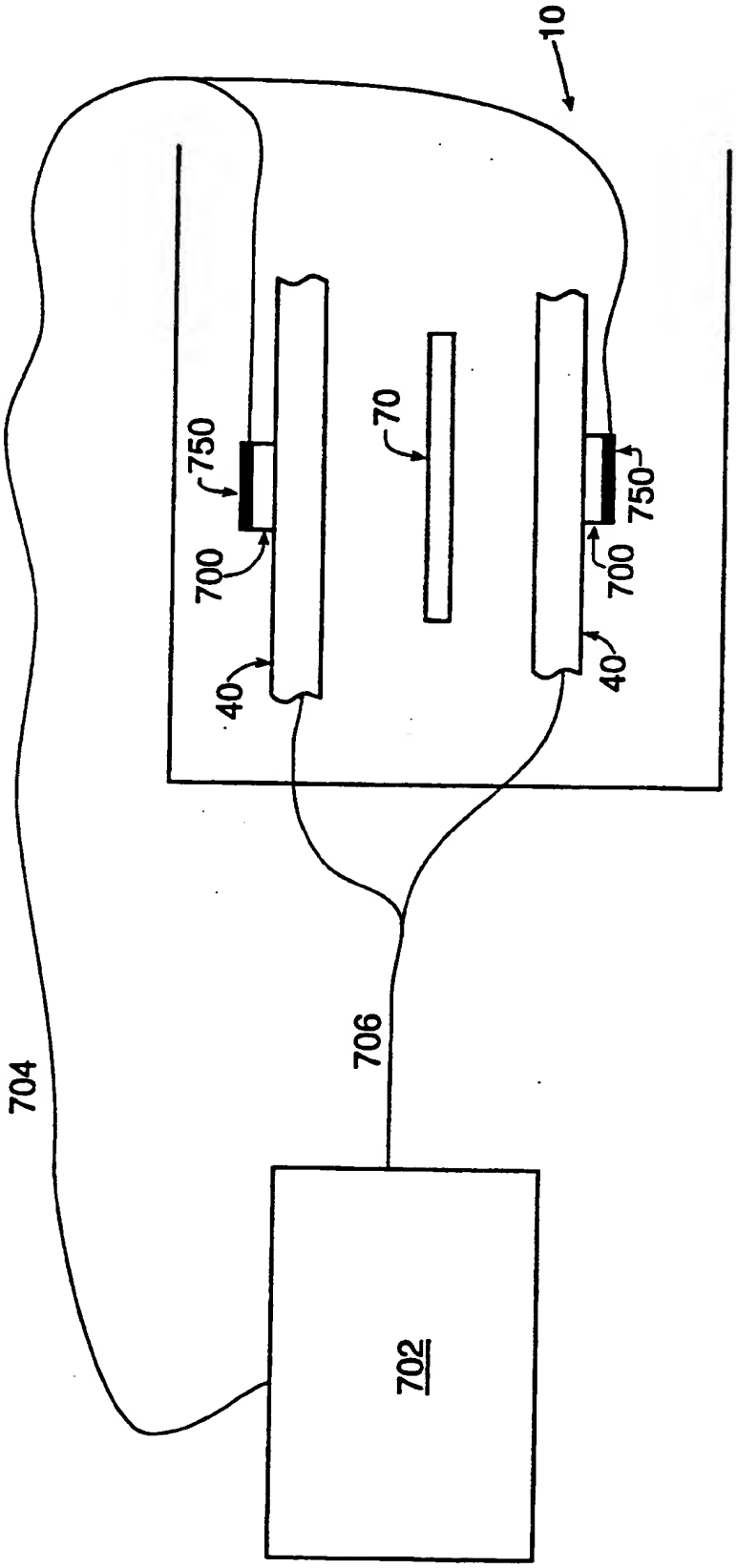


FIG. 13

BY | CLASS | SUBCLASS
DRAFTSMAN

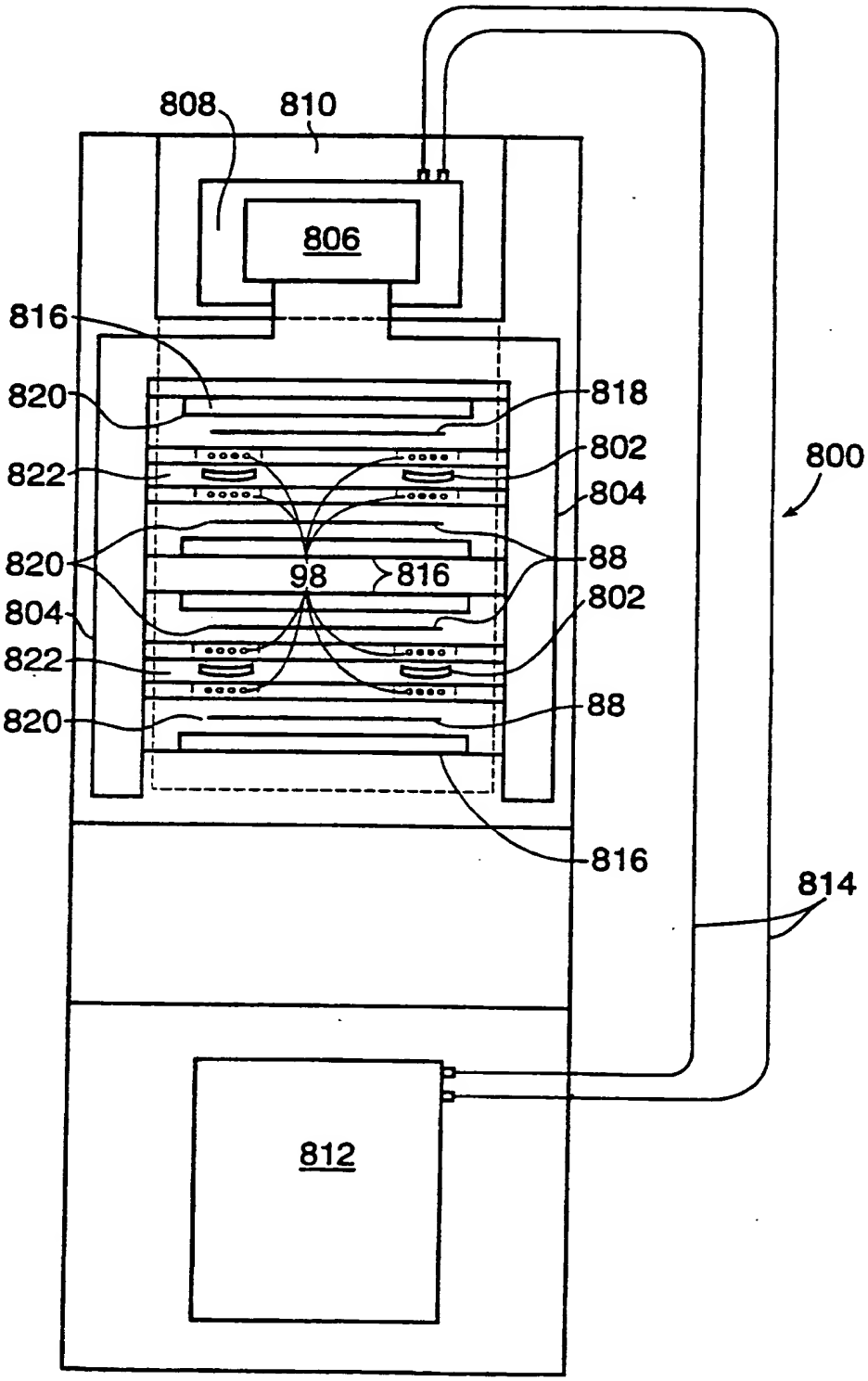


FIG. 14

BY
CLASS
SUBCLASS
DRAFTSMAN

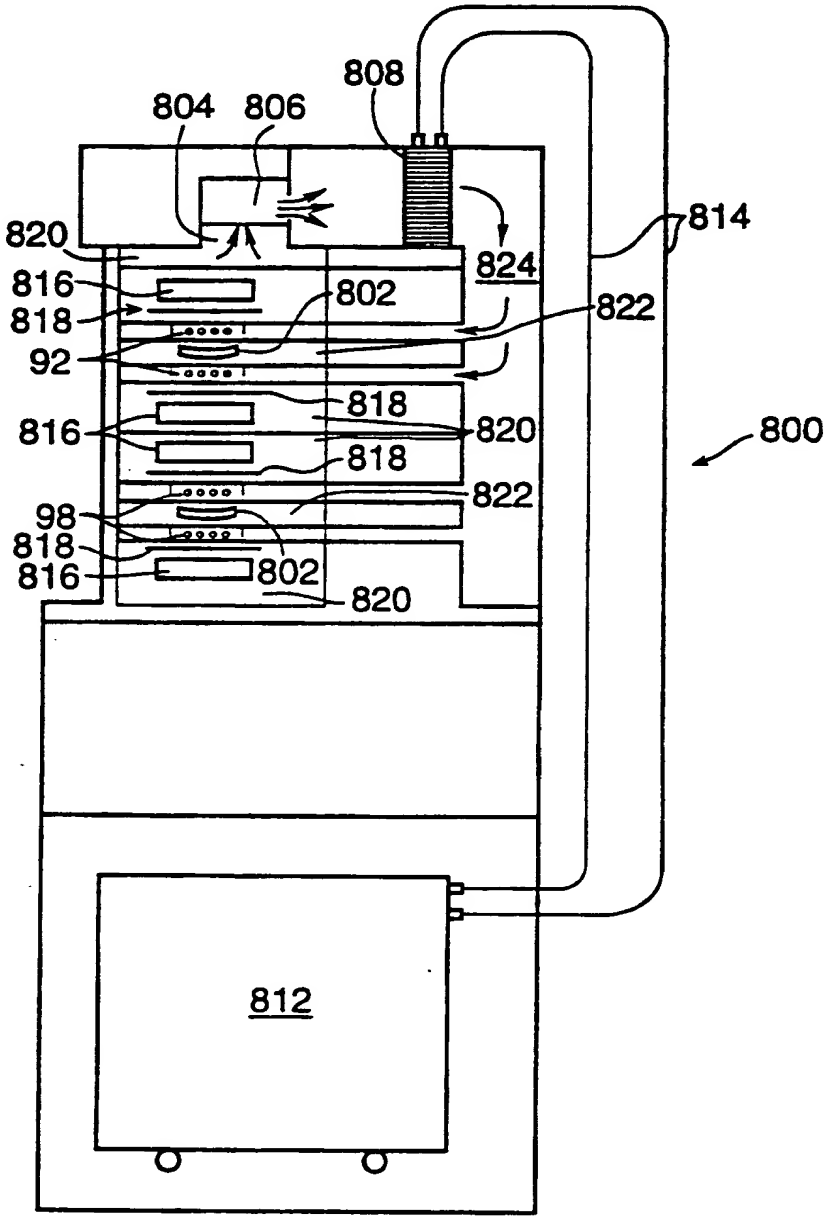


FIG. 15

BY | CLASS | SUBCLASS
DRAFTSMAN

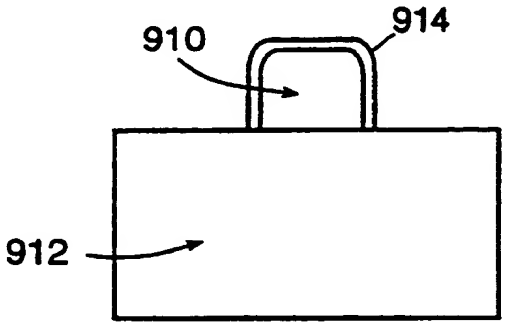


FIG. 16

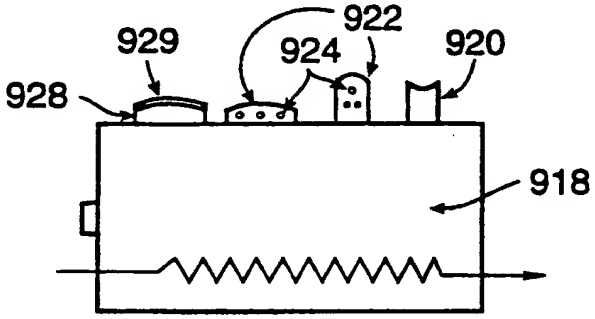


FIG. 17

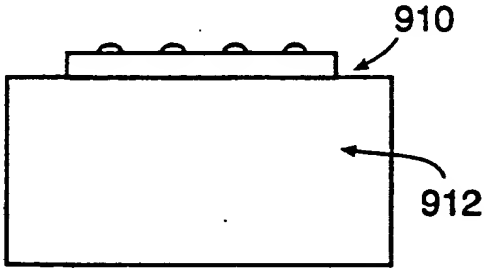


FIG. 18

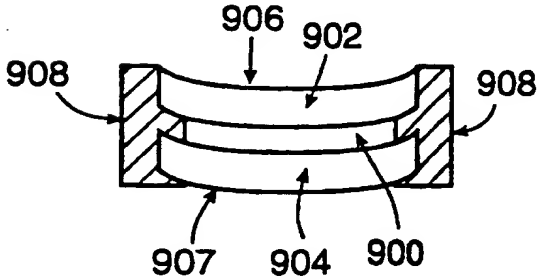


FIG. 19

BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

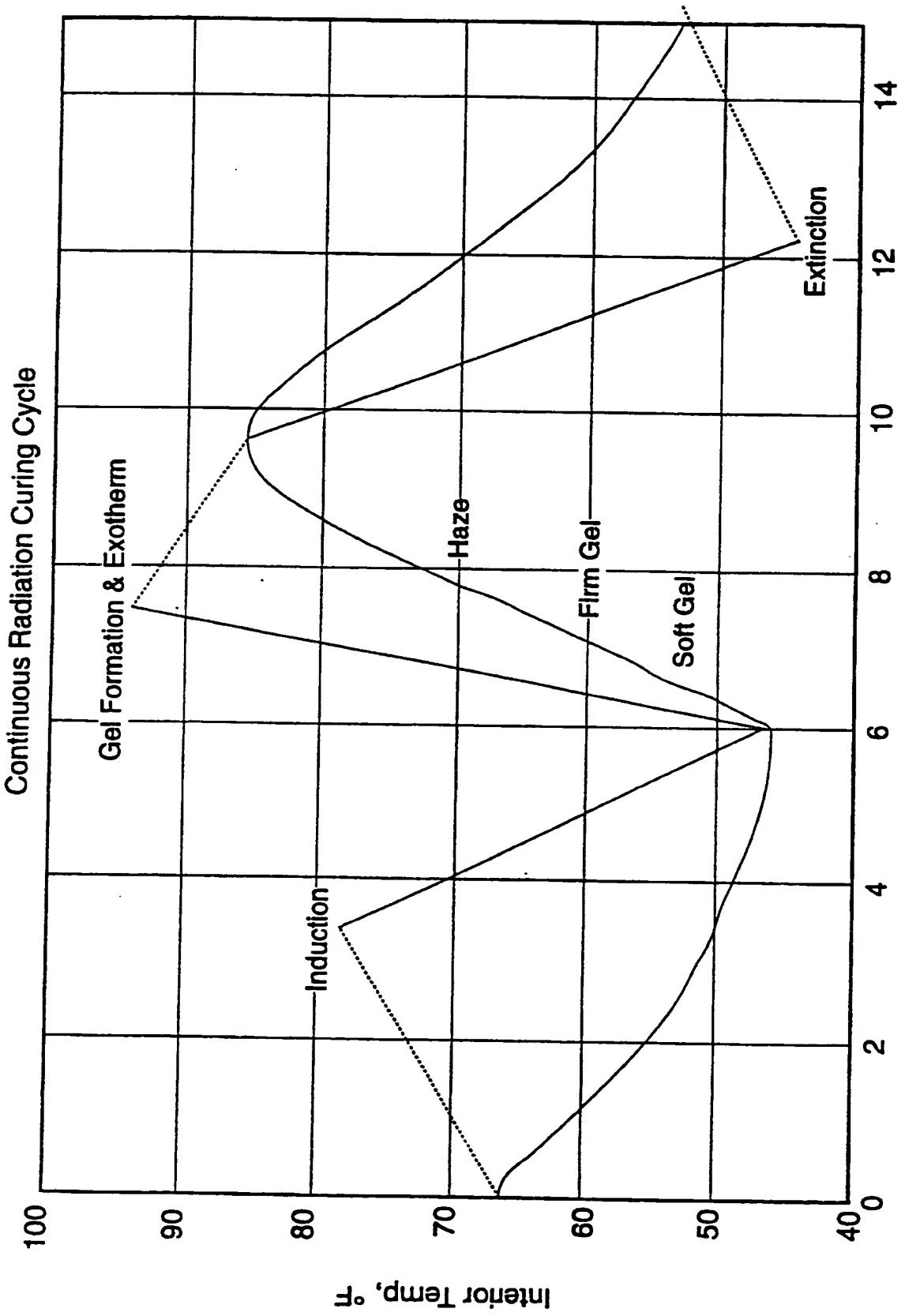


FIG. 20

DRAFTSMAN BY
CLASS SUBCLASS

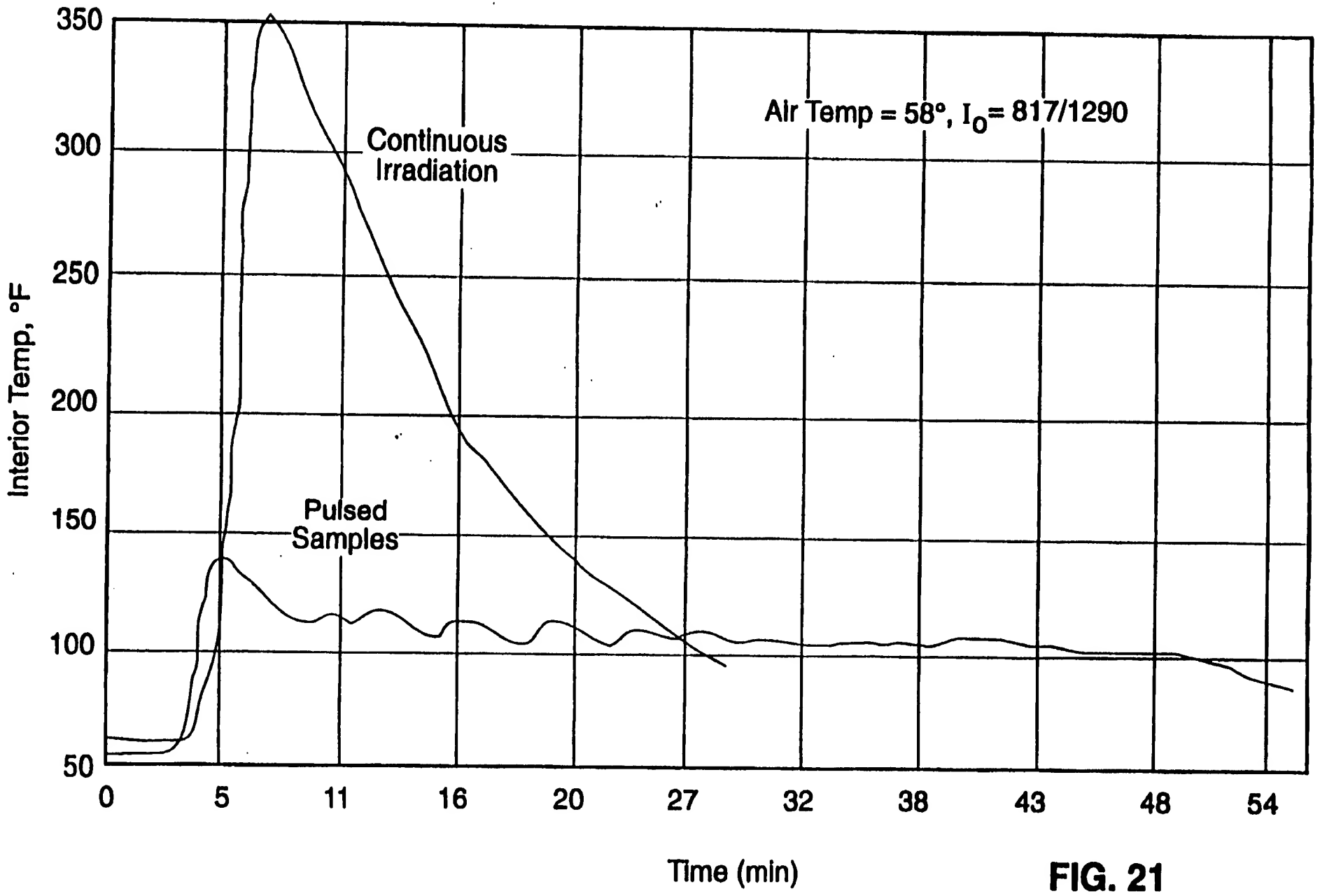


FIG. 21

DRAFTSMAN BY
CLASS SUBCLASS

Interaction of Pulsed Method Variables

FIG. 22

On this cycle variable in: / The effect that this variable will tend to have:	MASS OF SAMPLE	LIGHT INTENSITY	RATE OF COOLING	IDENTITY OF MONOMER
OPTIMAL INITIAL EXPOSURE TIME	As sample mass increases, initial exposure time may be increased. The mass of the sample interacts with light intensity to determine a preferred initial exposure time.	As light intensity increases, initial exposure time may tend to decrease. The light intensity level may be controlled for a fixed curing cycle and initial exposure time. It is believed, however, that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	The rate of cooling tends to have a small impact upon the preferred initial exposure period in the FC-104 curing chamber.	Differences in inhibitor & initiator levels between batches of otherwise identical monomers may significantly affect induction periods. Various radiation curable compounds may also vary widely in their preferred initial exposure times due to inherent differences in their reactivity.
TOTAL CYCLE TIME	Increased sample mass may require increased total cycle time to dissipate the additional heat generated.	Increased light intensity may cause a decrease in the initial exposure period. It is believed, however that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	Increased rates of heat removal may allow for a reduction in the time between pulses and thus total cycle time.	A significant effect that various monomers may have upon total cycle time will come from their different preferred initial exposure times.
TIMING BETWEEN PULSES	Increased sample mass may require longer periods of cooling between pulses of light. More heat tends to be generated from each pulse for larger samples, thus requiring longer time periods to remove heat.	For a given light intensity level, the duration of the pulses may be adjusted to create the desired amount of reaction. The timing between the pulses may also be so adjusted.	Increased rates of heat removal tend to allow for a reduction in the time between pulses.	The duration of the pulses may be adjusted to create the desired amount of reaction and heat generation for the for the particular lens forming material being cured. Adjusting the cooling period between pulses may also be beneficial.

6611601 1685660

DRAFTSMAN BY
CLASS SUBCLASS

Interaction of Pulsed Method Variables (continued)

The effect that this variable will tend to have:

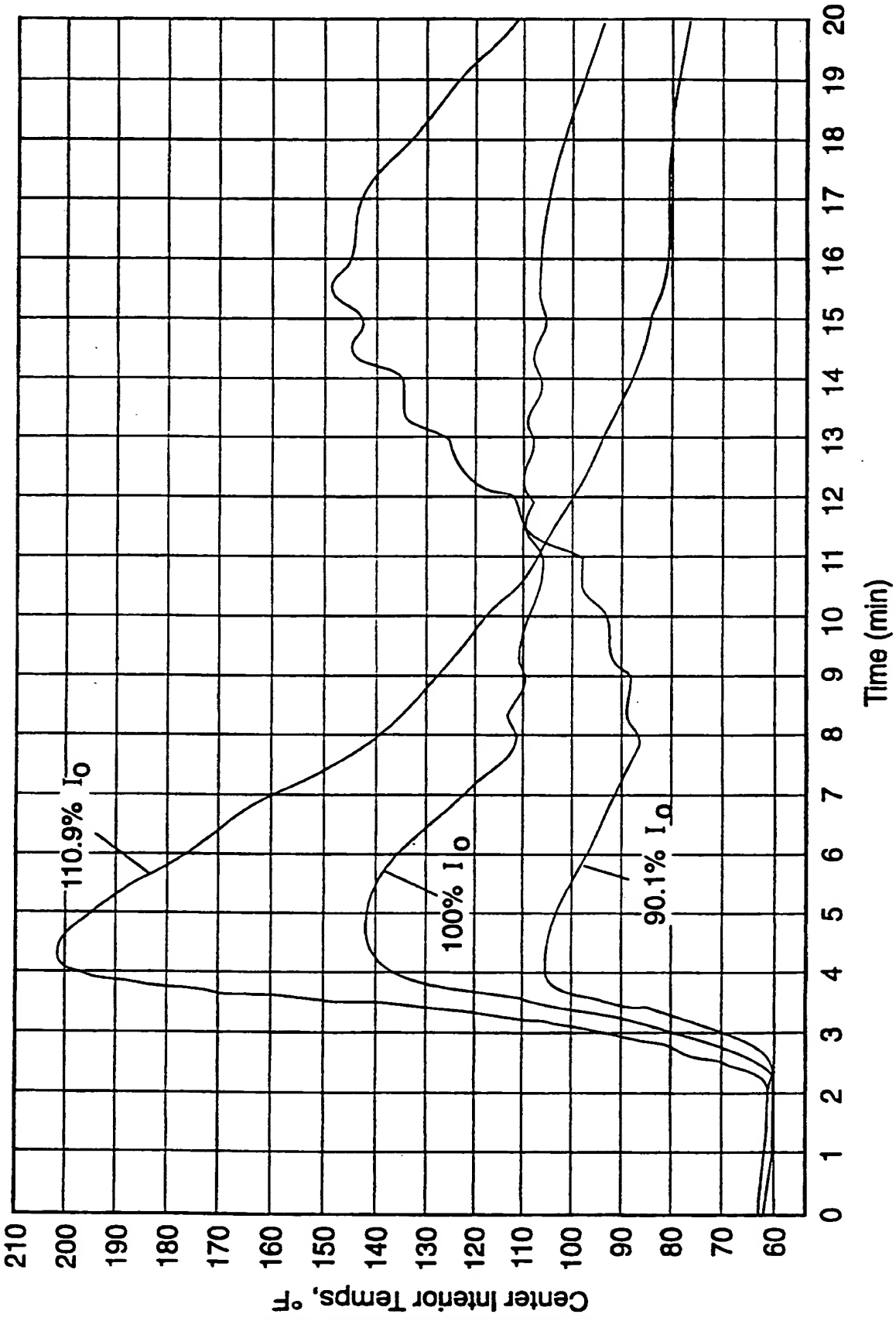
On this cycle variable in:	MASS OF SAMPLE	LIGHT INTENSITY	RATE OF COOLING	IDENTITY OF MONOMER
TOTAL EXPOSURE TIME	Increased sample mass tends to require both increased initial exposure time and a greater number of pulse/cooling cycles.	Increased light intensity will tend to result in decreased total exposure time and decreased light intensity will tend to require increased exposure time. It is believed, however, that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	There is only a small relationship between the total dosage of light a particular mass sample requires to polymerize and the rate at which it is being cooled.	A significant effect that monomer identify may have on total cycle time may be contributed by differences in the preferred initial exposure period. Various lens forming materials may also require longer/shorter duration pulses depending upon their reactivity.
DURATION OF PULSES	The length of the pulses during each phase of the curing cycle may be adjusted for different mass samples. The time between pulses may be increased /decreased according to mass.	The duration of the pulses may be varied in inverse proportion with the light intensity selected. It is believed, however that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	A pulse will tend to generate a certain amount of heat to be dissipated. Since the pulse duration tends to be small relative to the time between pulses when the heat is being removed, changes in the rate of heat removal should not significantly affect the ideal pulse duration.	Various lens forming materials require different pulse duration depending upon their reactivity. For a selected material, slight differences in initiator & inhibitor levels will not tend to affect pulse duration.

FIG. 22
(continued)

BY
DRAFTSMAN
CLASS
SUBCLASS

Copyrighted Material

FIG. 23



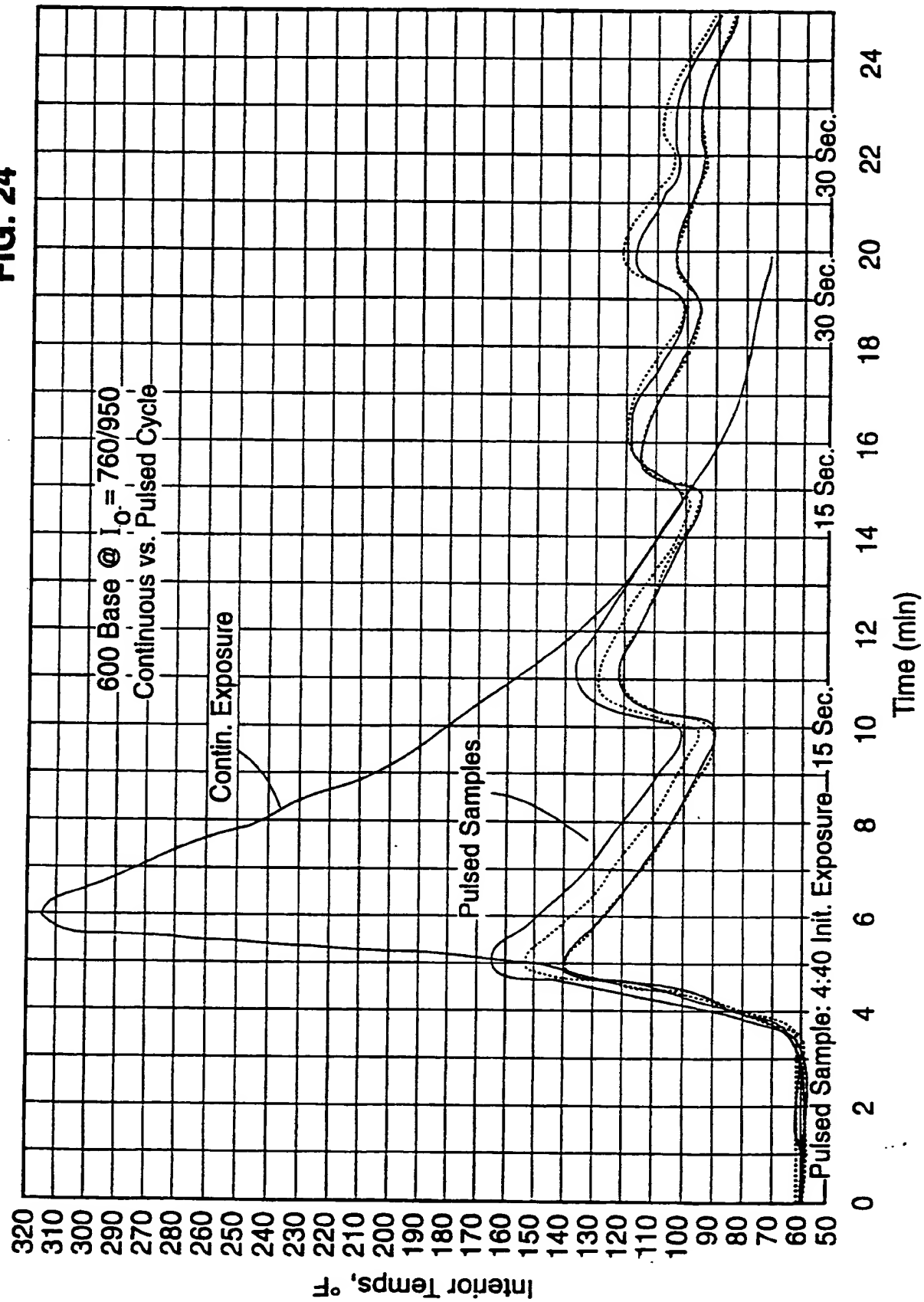
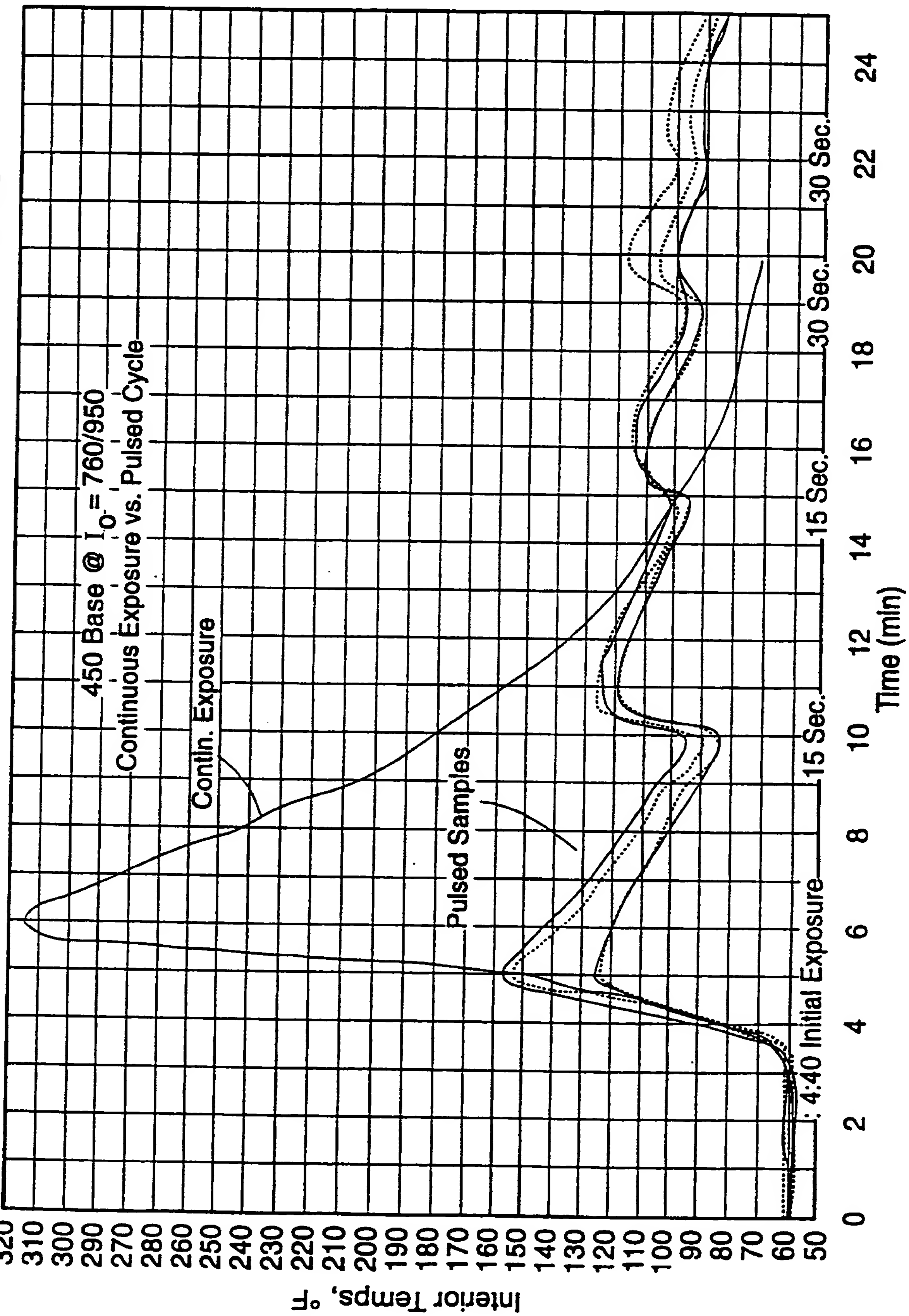

Interior Temps, °F
320
310
300
290
270
280
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
0
2
4
6
8
10
12
14
16
18
20
22
24
Time (min)
Pulsed Sample: 4:40 Init. Exposure
15 Sec.
15 Sec.
30 Sec.
30 Sec.
600 Base @ I_O = 760/950
Continuous vs. Pulsed Cycle
Contin. Exposure
Pulsed Samples

FIG. 24

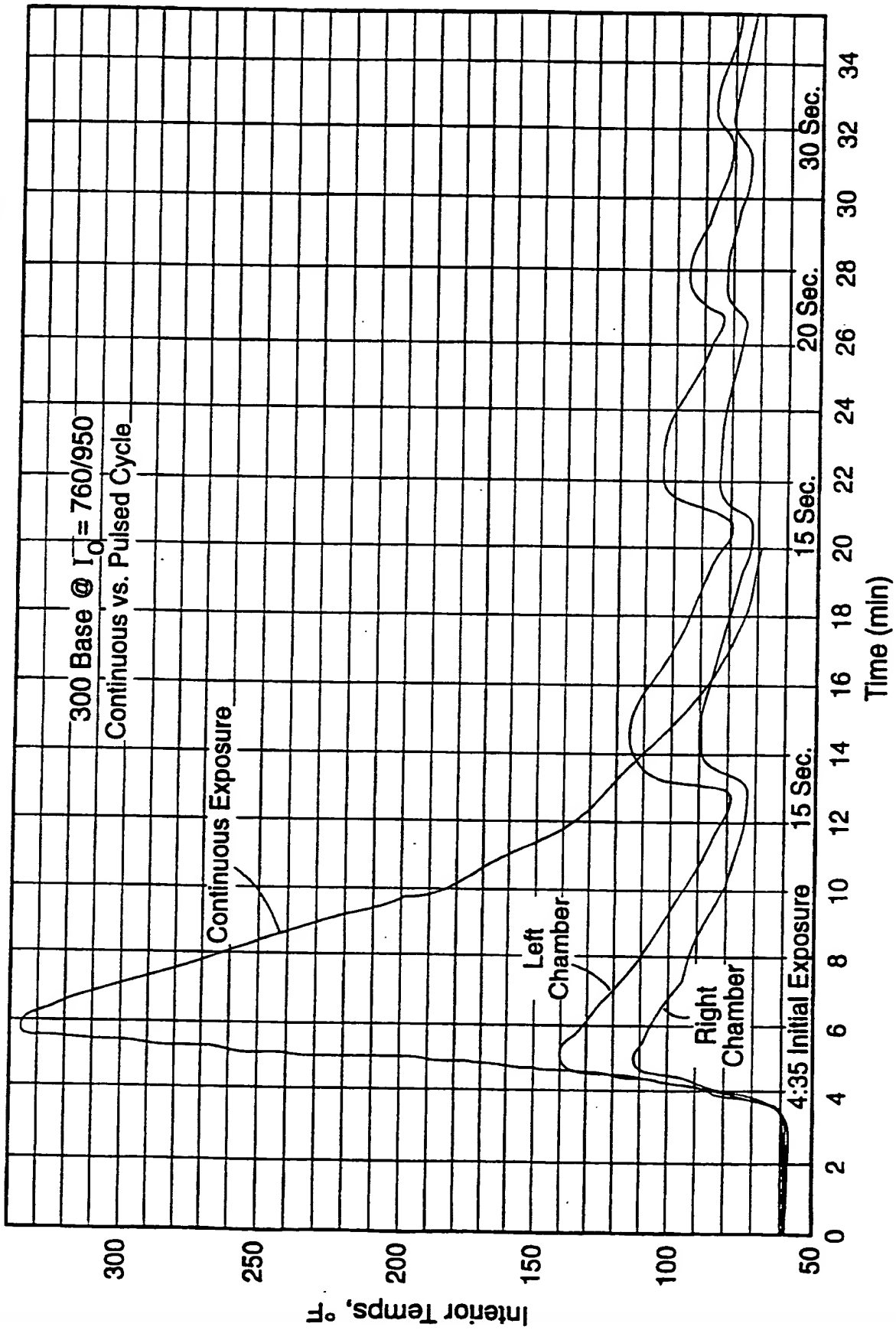
BY | CLASS | SUBCLASS
DRAFTSMAN

FIG. 25



BY
DRAFTSMAN
C.G. FIG.
CLASS
SUBCLASS

FIG. 26



BY | CLASS | SUBCLASS
DRAFTSMAN

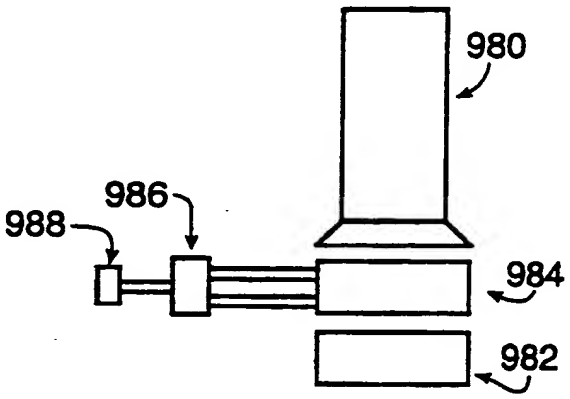


FIG. 27

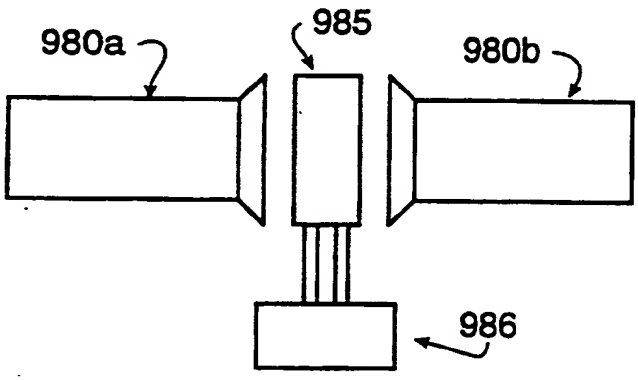


FIG. 28

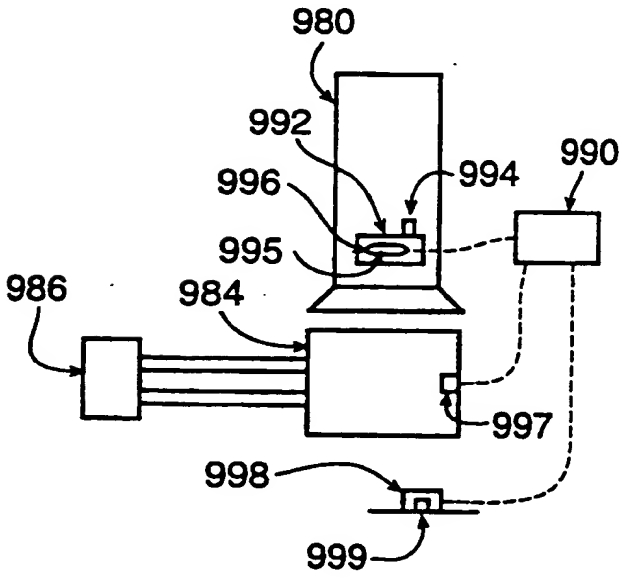


FIG. 29

BY | CLASS | SUBCLASS
DRAFTSMAN

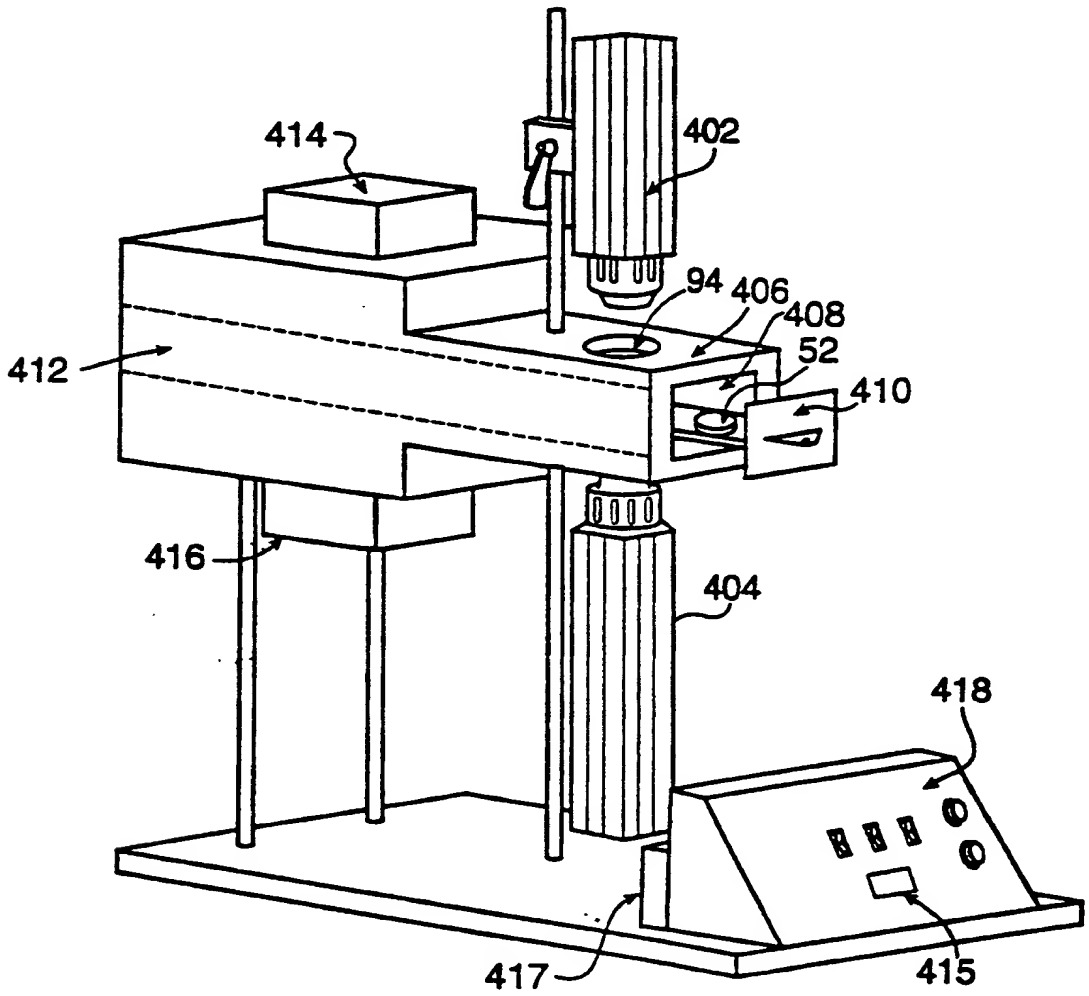


FIG. 30

BY
CLASS | SUBCLASS
DRAFTSMAN

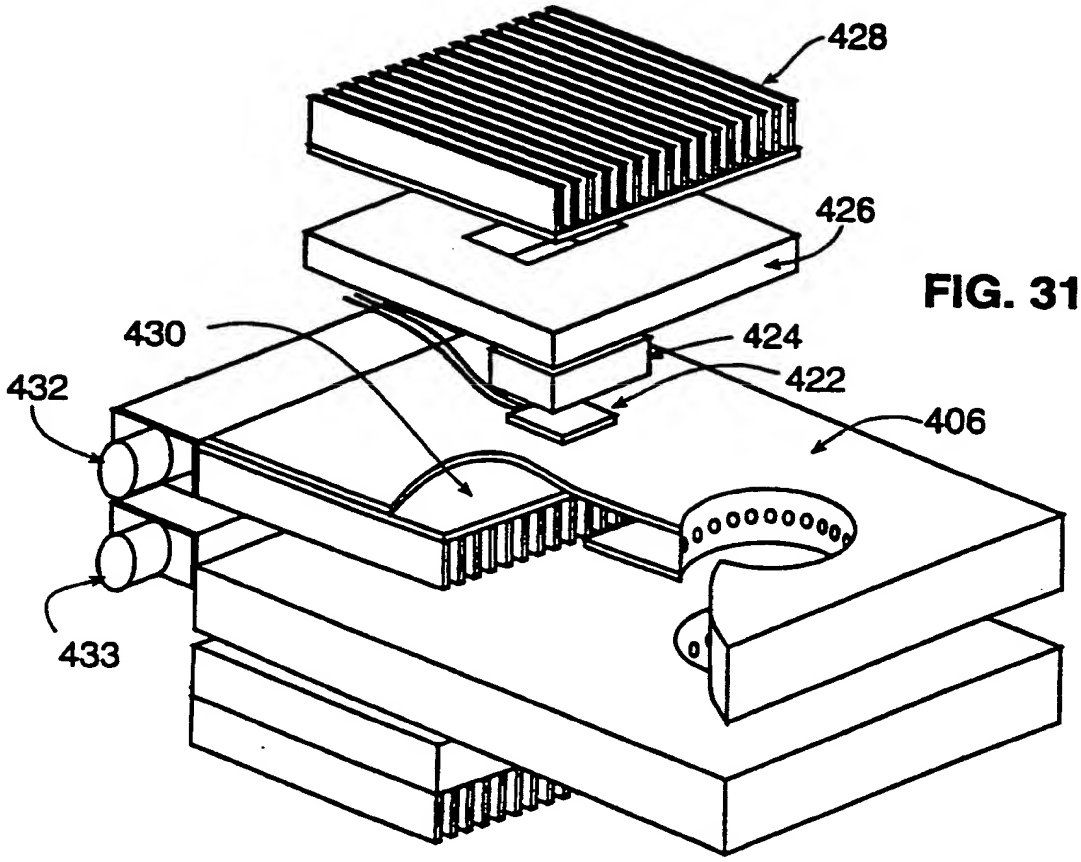


FIG. 31

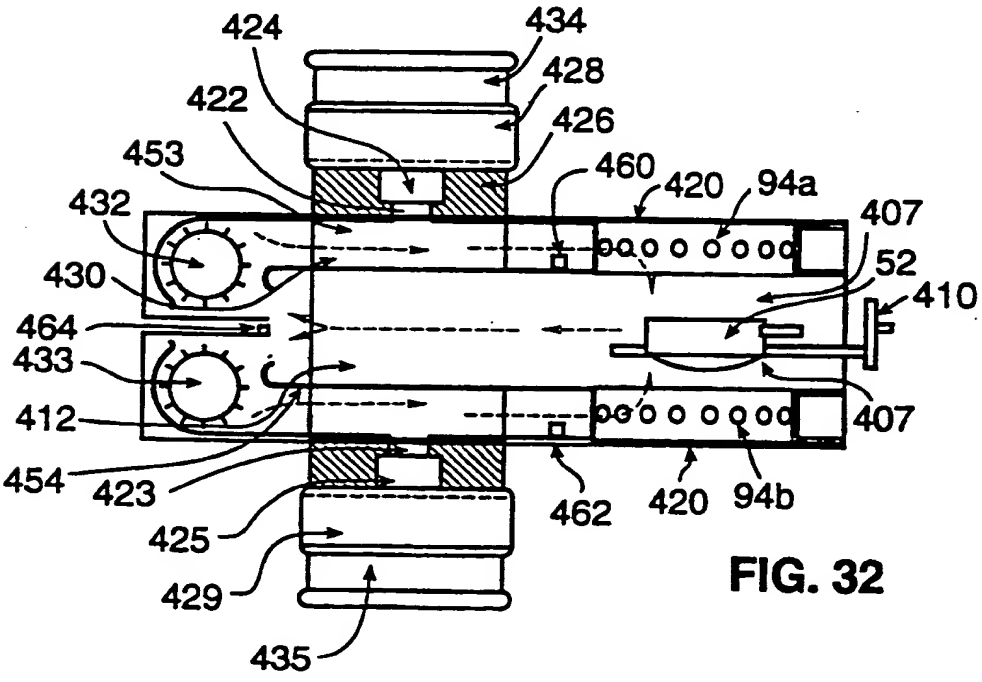


FIG. 32

BY
DRAFTSMAN
CLASS
SUBCLASS

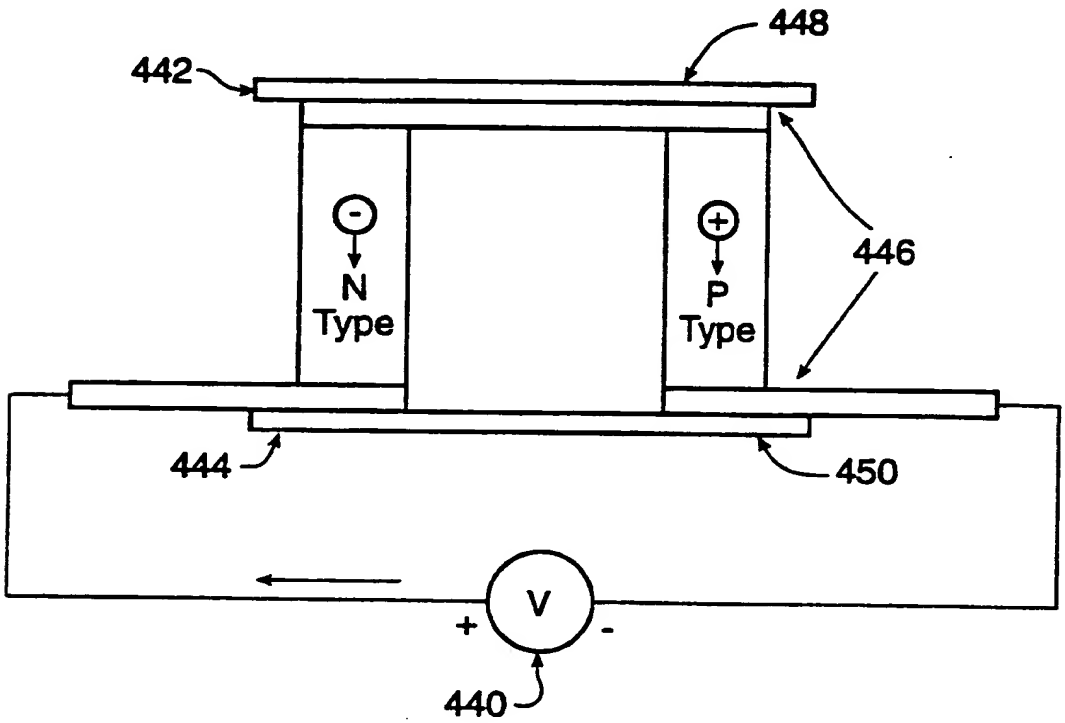


FIG. 33

BY
DRAFTSMAN
CLASS
SUBCLASS

FLASH LAMP CURING CYCLE

FLASH #	ELAPSED TIME (SECONDS) TOP LAMP	BOTTOM LAMP
1	1	
2		3
3	5	
4		7
5	9	
6		11
7	13	
8		15
9	17	
10		19
11	21	
12		23
13	25	
14		27
15	29	
16		31
17	33	
18		35
19	37	
20		39
21	41	
22	45	
23	49	
24		267
25	269	
26	541	

FLASH #	ELAPSED TIME (SECONDS) TOP LAMP	BOTTOM LAMP
27		543
28	781	
29		783
30	785	
31		787
32	905	
33		905
34	909	
35	913	
36		959
37	961	
38		963
39	965	
40	969	
41	973	
42	977	
43	1021	
44		1023
45	1025	
46		1027
47	1029	
48		1031
49	1033	
50		1035
51	1037	
52		1039

FIG. 34

BY
CLASS SUBCLASS
DRAFTSMAN

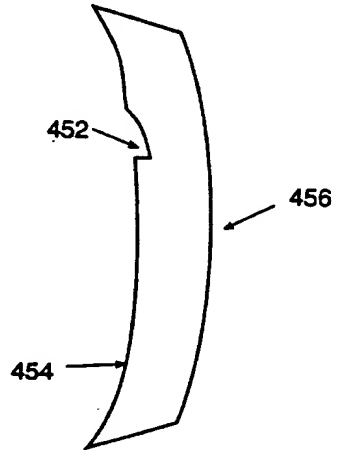


FIG. 35

BY DRAFTSMAN | CLASS | SUBCLASS

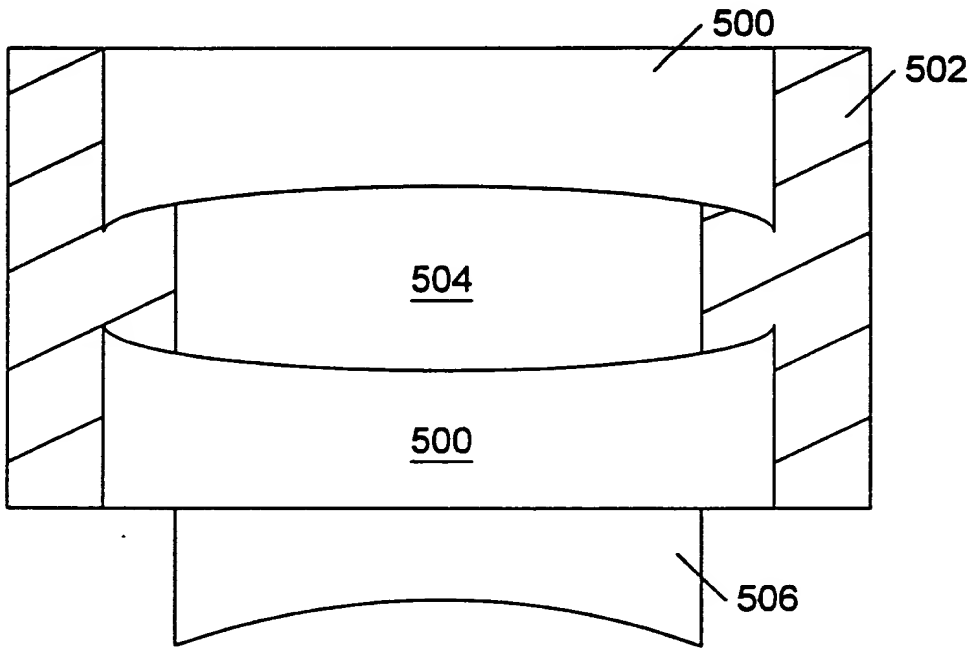


FIG. 36

6,870,966

BY
DRAFTSMAN
CLASS
SUBCLASS

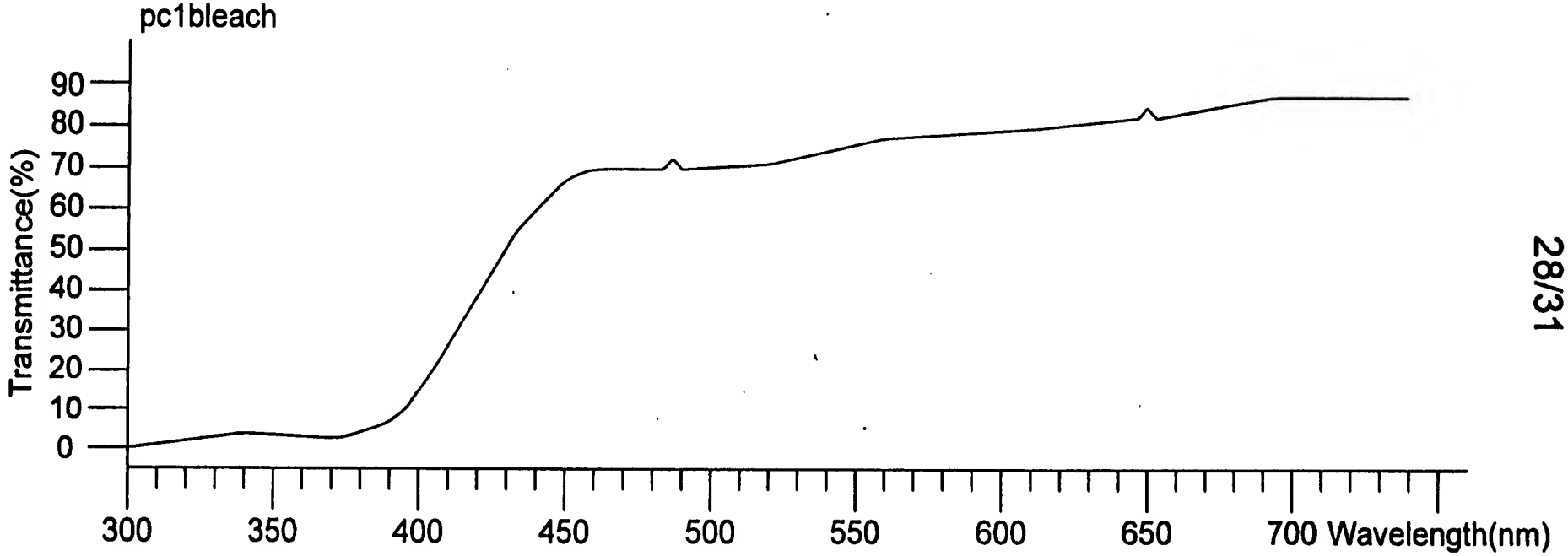


FIG. 37

DRAFTSMAN
CLASS
SUBCLASS
BY

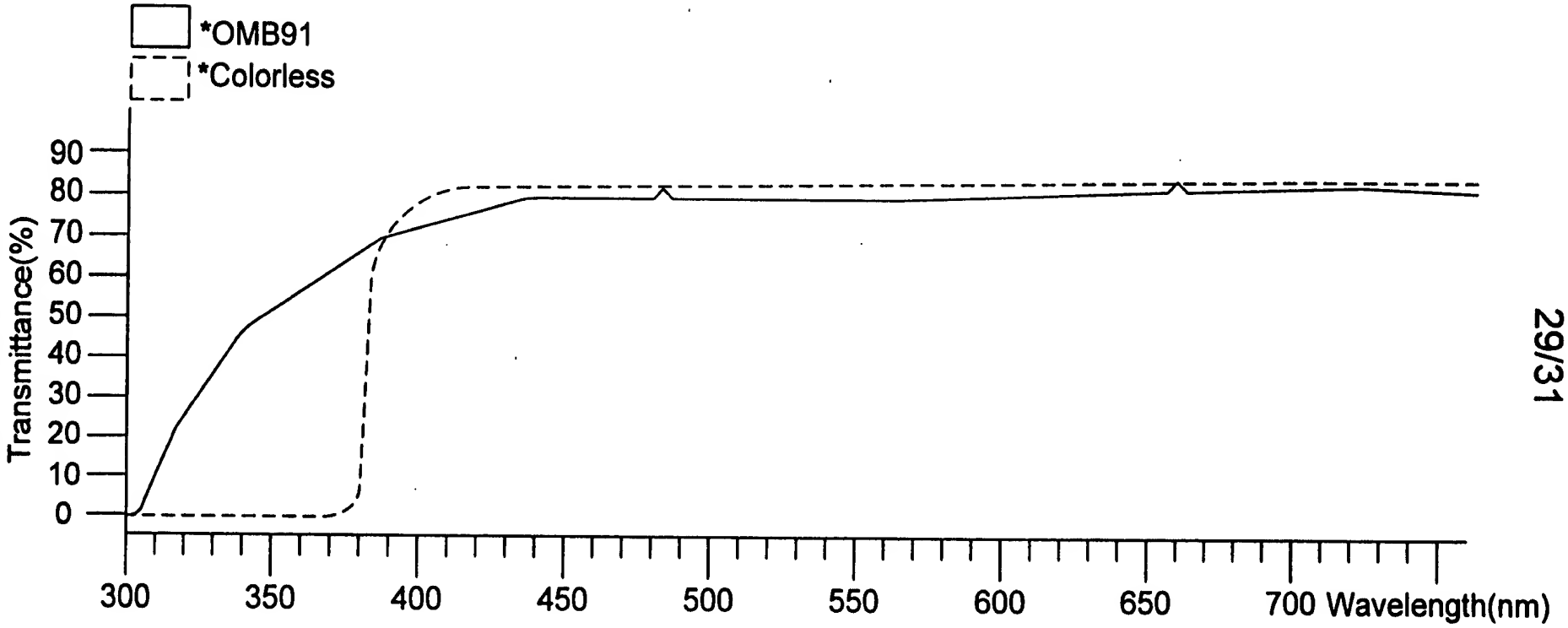


FIG. 38

BY
DRAFTSMAN
CLASS

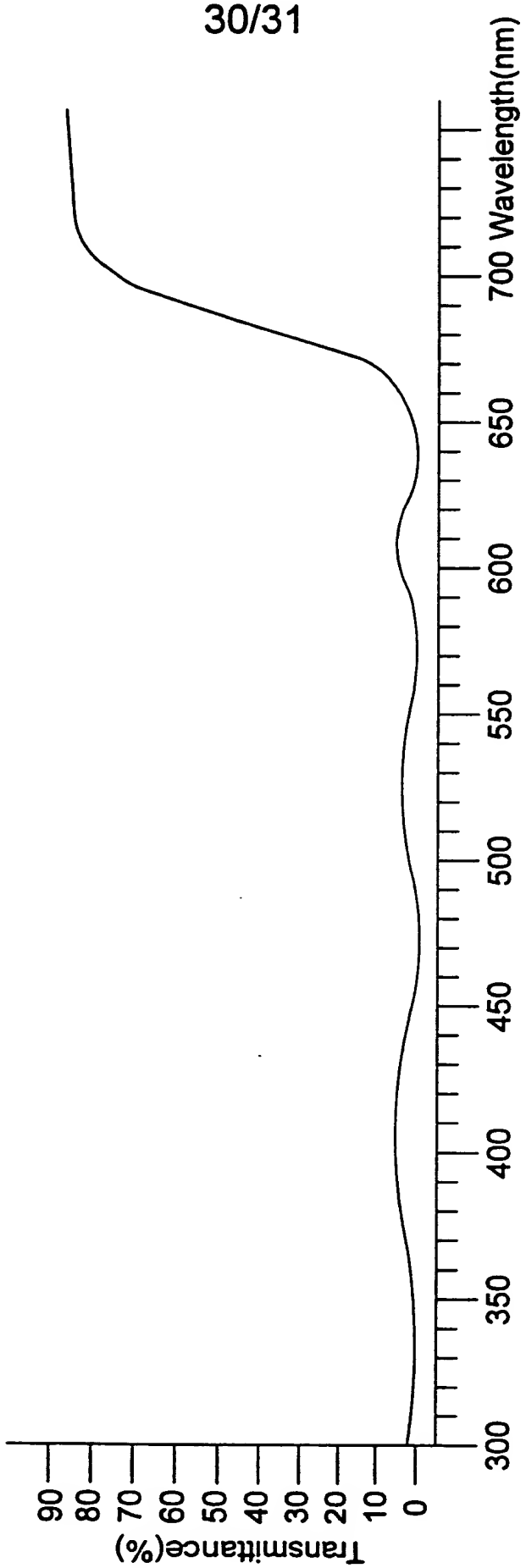


FIG. 39

BY
DRAFTSMAN
CLASS
SUBCLASS

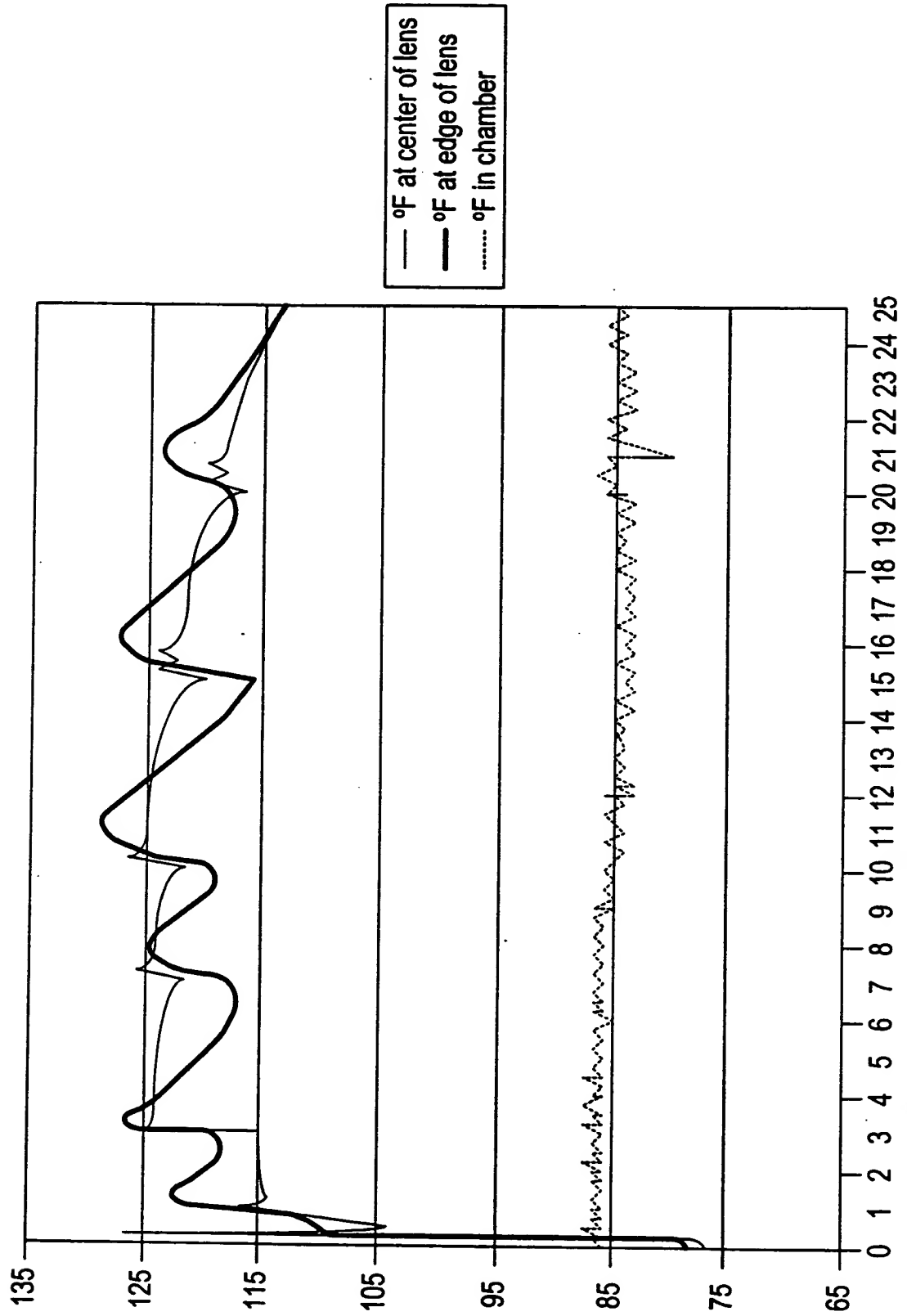


FIG. 40